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REMARKS

In the December 4, 2003 Office Action, claims 7-12 are rejected and claims 1-6 and 13-15 are withdrawn from consideration as being directed to the non-elected invention. In response, claims 1-6 and 13-15 are cancelled. Claim 1 is amended and new claims 16 and 17 are added. For the reasons discussed below, claims 7-12, 16 and 17 are submitted to be in condition for allowance. Accordingly, reconsideration and allowance are requested.

The present Amendment amends claim 7 to recite that the particulate water-absorbent resin is "free-flowing". Support for this feature is found on page 8, lines 20-23 of the specification. Claim 7 is also amended to recite that the process step for storing the particulate free-flowing water-absorbent resin satisfies each of the recited steps 1, 2 and 3.

New independent claim 16 depends from claim 7 to recite the particulate free-flowing water-absorbent resin having a water content of 3% to 15% as disclosed on page 4, lines 12-13 of the specification. New claim 17 depends from claim 7 to recite that the particulate free-flowing water-absorbent resin has a particle diameter not greater than 1000 μm as disclosed on page 8, lines 20-22 of the specification.

In the prior Office Action, claims 7-12 are rejected as being obvious under 35 U.S.C. § 103(a) over the alleged prior art noted in the Background of the Invention in view of U.S. Patent No. 3,650,804 to Parisi. The Advisory Action indicates that Parisi is cited as allegedly disclosing the concept of a heated storage tank to provide the stored material with the desired flow properties. However, the Action provides no basis to support the position that it would be obvious to modify the discussion in the present specification relating to particulate water-absorbent resin based on the unrelated process of reducing the viscosity of a liquid as in Parisi.

The important advantages of the invention are disclosed on page 4, lines 1-8 of the specification. Specifically, a primary purpose of the claimed process is to treat a particulate water-absorbent resin to enable pulverization, transportation and storage, and prevent contamination of the cohered matter of the particulate water-absorbent resin. The particulate water-absorbent resin of the claimed invention is free-flowing, unlike the viscous liquid resin of the cited art. In the claimed invention, cohered agglomerate can form because of the water content of the resin. As now recited in claim 16, the particulate free-flowing water-absorbent resin has a water content of about 3% to about 15%.

As disclosed on page 4, lines 21-25 of the specification, the storage tank of the invention is heated and thermally insulated to inhibit the cohesion and agglomeration caused by the water content of the particulate free-flowing water-absorbent resin. Thus, as now recited in claim 7, each of the steps 1, 2 and 3 are carried out in the present invention. Note particularly steps 2 and 3 which recite the temperature conditions for the surface of storage tank. Step 2 of claim 7 recites that the temperature of surface of the storage apparatus is at 30°C to 150°C. Step 3 of claim 7 recites that the temperature of the surface of the storage apparatus is above a temperature that is lower than the temperature of the resin by 20°C. The temperature conditions recited in steps 2 and 3 are determined in consideration of the fluidity of the particulate free-flowing water-absorbent resin and to prevent the formation of large cohered particles or matter. This feature of the invention is described on page 11, line 16 to page 12, line 26 of the specification.

As noted in the previous response, the claimed invention is directed to a process for storing a particulate free-flowing water-absorbent resin and inhibiting agglomeration. Water-absorbent resins are normally produced as a powder of different size particles. The claimed process includes the steps of 1) applying heat externally to heat at least one portion of the

surface making contact with the particulate water-absorbent resin, 2) maintaining the temperature of at least one portion of the surface making contact with the particulate water-absorbent resin at 30-150°C, and 3) maintaining the temperature of at least one portion of the surface making contact with the particulate water-absorbent resin above a temperature that is lower than a temperature of the particulate water-absorbent resin particles by 20°C, and thereafter storing the particulate water-absorbent resin. The alleged admitted prior art and the cited art of record either alone or in combination do not disclose or suggest the claimed process steps.

The rejection appears to be based primarily on the alleged admitted prior art in the specification which recognizes the problem of the particles agglomerating water-absorbent resin particles and that the agglomerated water-absorbent resin particles can adhere to the pulverizer or to the outlet of the pulverizer. As correctly noted in the Action, this passage does not provide a solution to the problem of agglomeration of the water-absorbent resin particles. This passage does not suggest that one skilled in the art recognized that a solution to the problem of agglomeration exists or that agglomeration can be avoided. Furthermore, this passage fails to provide any suggestion to one of ordinary skill in the art how to avoid the agglomeration of the water-absorbent resin particles.

U.S. Patent No. 3,650,804 to Parisi is cited as disclosing a process for heating a liquid sealant. The Action contends that a disclosure of heating a liquid is the same “concept” used by the invention. However, it is clear that the object of Parisi is to increase fluidity by reducing the viscosity of the liquid resin. In contrast, the claims recite heating a particulate water-absorbent resin which do not change the “fluidity” as suggested in the Action but instead prevents agglomeration. A particulate water-absorbent resin does not have a “viscosity”. Furthermore, a “viscosity” of the particulate water-absorbent resin does not

decrease by heating. Rather the heating of the storage apparatus of the claimed invention inhibits agglomeration of particles. The rejection of claims 7-12 is based on the misplaced position that it would be obvious to heat water-absorbent resin particles in view of a disclosure of heating a liquid synthetic resin sealant. Parisi does not suggest that heating can prevent or inhibit agglomeration of resin particles. In fact, nowhere in the art is there any suggestion that one skilled in the art would recognize that heating can inhibit agglomeration, and particularly agglomeration of a free-flowing particulate water-absorbent resin. Contrary to the assertion in the Action, Parisi does not show a solution to particulate agglomeration. The Action fails to present an analogy between the chemical and molecular properties that effect changes in viscosity of a liquid and the physical properties and static electricity that effect agglomeration of the particles. Furthermore, the Action provides no basis for one of ordinary skill in the art having an expectation of success in reducing or preventing agglomeration of water-absorbent resin particles by the claimed process.

Contrary to the suggestion in the Action, Parisi is clearly not analogous to the claimed invention. Parisi merely discloses that the liquid resin can be heated in the storage tank 30 before distribution in chamber 22 or that it can be heated directly in chamber 22 by heater 42. See, for example, column 3, lines 13-16 of Parisi.

Parisi does not disclose or suggest the process of heating a particulate free-flowing water-absorbent resin by externally heating the storage apparatus as in step 1 of claim 7. Parisi further fails to disclose step 2 of maintaining the temperature of the surface of the storage apparatus at 30° to 150° or step 3 of maintaining the claimed relationship of the temperature of the resin and the temperature of the storage tank.

Parisi provides no suggestion of processing or handling particles of any kind or preventing agglomeration of particles. Parisi relates to a process for impregnating a porous

cast body with a liquid synthetic resin sealant by contacting the porous cast body with the sealant under pressure. A positive pressure is applied to the liquid sealant according to the process of Parisi to force the liquid synthetic resin sealant through the pores of the cast body. The liquid synthetic resin sealant is then cured within the pores to reduce the permeability of the resulting porous body. The synthetic resin sealant of Parisi is a liquid resin such as an epoxy-type resin that includes a curing agent. As noted in Parisi, the liquid resin is generally highly viscous so that the resin cannot penetrate the interstices of the porous body. To improve the permeability of the liquid sealant, Parisi heats the liquid sealant and applies a pressure to force the liquid into the porous body where the liquid resin can be cured. This clearly has no relation to the claimed invention.

The Action points to no disclosure in Parisi that would suggest to one of ordinary skill in the art that heat applied to water-absorbent resin particles can inhibit or prevent agglomeration. One skilled in the art would recognize Parisi discloses nothing more than the well known principal that the viscosities of liquids change with changes in temperatures. Reducing the viscosity of a liquid resin as in Parisi is not analogous or equivalent to preventing agglomeration of particles, and particularly preventing agglomeration of water-absorbent resin particles.

The Action has not identified the necessary incentive or motivation for heating water-absorbent resin particles. The process of Parisi which relates to reducing the viscosity of a liquid resin does not provide the necessary suggestion or motivation to heat particles of a water-absorbent resin. Parisi clearly provides no expectation of success that heating water-absorbent resin particles will inhibit or prevent agglomeration of the water-absorbent resin particles.

The Action has failed to set forth prima facie obviousness based on the alleged admitted prior art and Parisi. Accordingly, the Action has failed to demonstrate that it would be obvious to one of ordinary skill in the art to heat the apparatus that contacts the free-flowing water-absorbent resin particles to prevent or inhibit agglomeration of the particles. Thus, claim 7 is not obvious over the alleged admitted prior art in view of Parisi.

Claims 8-12, 16 and 17 are also allowable as depending from an allowable base claim and for reciting additional features of the invention that are not disclosed in the alleged admitted prior art and Parisi. Parisi has no relation to the claimed water-absorbent resin particles and instead only relates to impregnating a porous body with a liquid resin sealant. The alleged admitted prior art and Parisi do not disclose a process for storing surface crosslinked particles of a water-absorbent resin where the particles are heated to prevent agglomeration as in claim 8. The art of record also fails to disclose surface crosslinked water-absorbent resin particles containing a polyhydric alcohol as in claim 9, the absorption capacity under load as in claim 10, the partially neutralized carboxylic acid salt of claim 11, or the absorbent resin obtained by drying at 160°C to 250°C as in claim 12 either alone or in combination with the process steps of claim 7. Thus, claims 8-12 are not obvious over the art of record. Parisi also fails to disclose heating a particulate free-flowing water-absorbent resin having 3-15% water as in claim 16 or heating particles having a particle size of not greater than 1000 µm. Accordingly, claims 16 and 17 are allowable.

In view of the above comments, claims 7-12, 16 and 17 are submitted to be in condition for allowance. Accordingly, reconsideration and allowance are requested.

Respectfully submitted,



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